

Neurosyphilis

General

- infection of the CNS and meninges by *Treponema pallidum* (T.pallidum)
- divided into early and late neurosyphilis
- late (symptomatic) neurosyphilis usually takes 10-20 years to develop but can develop as early as 2 years after infection

Epidemiology/risk factors

- rare today with early detection and treatment
- preantibiotic era: 25-35% infected with syphilis developed neurosyphilis with 1/3 developing tabes dorsalis
- now, most forms of neurosyphilis occur in immunocompromised pt population (HIV/AIDS)
- most common form is early asymptomatic neurosyphilis
- lower the CD4 count, more likely to have symptomatic neurosyphilis

Symptoms

- divided into subgroups depending on timing and type of symptoms
- Early neurosyphilis, not considered “tertiary” form of syphilis
 1. *Asymptomatic*: identification of abnormality in CSF fluid from LP
 2. *Symptomatic meningitis*: HA, N/V, stiff neck, ocular and cranial nerve abnormalities, gumma formation in spinal cord leading to seizures. CSF abnormality more pronounced than in asymptomatic early neurosyphilis
- Late neurosyphilis, considered “tertiary” forms of syphilis
 3. *General paresis*: (general paralysis of the insane), progressive dementing illness. Neuro exam can be normal but likely illustrates dysarthria, hypotonia, intention tremors and reflex abnormalities along with confusion and memory problems, can cause psych abnormalities
 4. *Tabes Dorsalis*: (locomotor ataxia), posterior columns of spinal cord and dorsal roots affected causing sensory ataxia and sharp stabbing pain along with Argyll-Robertson pupil (accommodate without reactivity)

Diagnosis

-LP!

- elevated lymphocyte and protein count +/- reactive VDRL depending on type
- LP may be normal in tabes dorsalis
- FTA-ABS, TPPA, or syphilis EIA (reactive for life)

Treatment and follow-up

- asymptomatic early neurosyphilis: tx like regular syphilis infection with Benzathine PCN G 2.4 million units IM in a single dose (regardless of HIV status)
- symptomatic neurosyphilis (regardless of stage): Aqueous crystalline PCN G 18-24 million units per day, administered as 3-4million units IV every 4 hrs or continuous infusion x 10-14 days
- see CDC.gov for alternative and up to date treatment regimens
- F/U: CSF evaluation for resolution of pleocytosis every 6 months until the cell count is normal

Resources

<http://www.cdc.gov/std/treatment/2010/genital-ulcers.htm#syphhiv>
www.uptodate.com/neurosyphilis
<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001722/>